The perils of under-treatment - by not extracting asymptomatic third molar teeth, am I under-prescribing?

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A 22-year-old patient was referred by his dental practitioner to an oral surgeon with the request that a painful and impacted lower right third molar be removed. Radiographs supplied by the practitioner indicated that a surgical approach with bone removal and root division was necessary, and on examination the oral surgeon noted that the lower left third molar was in a similar, if not worse, impacted situation. As surgery was to be carried out under general anaesthetic, the surgeon initially recommended that both third molars be removed at the same time. However, he was uncertain as to whether it would be prudent to remove only the one symptomatic tooth and if he did so, could he then be accused of under-prescribing? In addition, the dilemma also brought up consideration of the necessity of a second general anaesthetic with its concomitant risks, should the other wisdom tooth become symptomatic and also need removal later.

COMMENTARY

A patient entering a dental practice will have a reasonable expectation that the provider of any service would act with appropriate skill and care in the delivery of that service - this is often described as a 'duty of care' owed by the provider to the recipient. In most cases recognition of this 'duty of care' is a necessary requirement before there can be any consideration of negligence. The duty of care is an important professional and ethical responsibility. An extension of the duty of care is the presumption that an appropriate standard of service and care will be delivered.[1] Every dentist has a duty of care to exercise reasonable skill and competence when treating patients under their care. Failing to provide such care can result in the duty of care being breached.[2] It is therefore important that the principles of evidence-based clinical decision making are applied when answering clinical conundrums.

The management of asymptomatic, disease-free third molar teeth is challenging and the question to pose with regard to the above-mentioned scenario is whether patients who had asymptomatic, disease-free third molars, and who underwent their extraction have better outcomes than those patients who retain their "wisdom teeth?

A recent Cochrane review by Mettes *et al.*[3] concluded that there was no reliable evidence to support or refute routine prophylactic removal of asymptomatic impacted wisdom teeth in adults. There was, however, some reliable evidence that suggested that the prophylactic removal of asymptomatic impacted for wisdom teeth in adolescents does not reduce or prevent late lower incisor crowding. Orthodontic recommendations for removal of third molar teeth should always be based on a comprehensive analysis of space and growth factors.

Mettes *et al.*[3] recommended that the dentist should be responsible for monitoring third molars in on-going communication with patients and, where there are more complex cases, with the oral and maxillofacial surgeon as a consultant. Special attention should be paid to the onset of pathology, based on explicit terminology and definitions, the monitoring and registration of morbidity and quality of life aspects (i.e. patients' perspective, values and attitudes).

More recently, there has been literature related to the terminology regarding the use of the word "asymptomatic" where it was felt that it was insufficient to describe the clinical status of third molar teeth as it did not necessarily imply the absence of disease.[5] Dodson *et al*[5] has suggested that the characteristics of an asymptomatic , disease-free third molar should include the following:

1	Patient history	No or vague symptoms, nonspecific complaints not readily attributed to the third molar teeth.
2	Clinical examination	
	2A	Impacted molar cannot be seen, cannot be probed, probing depths <4mm.
	2B	Erupting molar with adequate space to accommodate a functional tooth.
	2C	Erupted third molar that has reached the occlusal plane; is functional, hygienic, with probing depths <4mm, with no caries, restorable caries or restored; all 5 surfaces can be examined clinically; and at least 1mm of attached gingival tissue surrounds the tooth.
3	Radiographic examination	No evidence of radiographic disease present, including adequate space to accommodate an erupting third molar.

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The long-term sequelae of retained third molars are unpredictable. Retained third molars can remain asymptomatic and free of disease, but a host of conditions, primarily inflammatory, can develop over time.[4]

There are no clear guidelines regarding the protocol for monitoring third molars; namely, whether it should be 'as needed' (when symptomatic or disease manifests) or 'active surveillance' (with regular follow-up and assessment). Some authors have recommended that retained molars be monitored with active surveillance at 24-month intervals and that at these follow-up visits, the clinician should review the history and perform clinical and radiographic examinations to identify the presence of any disease.[4]

What is important is that when a practitioner advises a patient regarding the management of asymptomatic, disease-free third molar teeth, the risks and benefits of its removal as compared with retention with active surveillance are clearly described. However, while the risks of removal are well known and quantified, the risks and benefits of retention are less clear. The obvious immediate benefit of retention is avoiding the risks and costs associated with removal. However, this is a short-term benefit. There is no guarantee of avoiding extraction in the future with the associated costs and age-related risks for complications.[4,6]

According to a recent Finnish evidence-based care guideline,[7] the indications for removal are:

1. the patient has symptoms;
2. clinical or radiologic signs of disease are diagnosed;
3. other dental or general disease; and
4. preventive removal.

The guideline recommends that preventive removal of asymptomatic and disease-free third molars is indicated when future problems are anticipated but the risks of removal are still minimal. In young adults, preventive removals in the lower jaw are indicated especially in the following cases: horizontal teeth not totally buried in bone, incomplete root close to the mandibular nerve and partially bone-impacted teeth in the vertical or disto-angular position. In addition, on the findings from the review, the author concluded that about one fourth of retained and disease-free third molars needed to be removed preventively at a young age, and that the rest should be treated according to signs and symptoms.[7]

Autonomy refers to the right of every individual to make decisions for him/herself. In health care this entails allowing the patient to make the final decision regarding his/her treatment, having been provided with all the necessary and relevant information.

Before subjecting a patient to any investigations or treatment, we need to obtain their informed consent, both an ethical and a legal requirement. It is important, firstly, that a patient is competent to consent. A competent patient will be able to make a choice based on an understanding of the information given to him/her, an appreciation of the diagnosis, illness and/or procedure and its consequences discussed, and will be able to reason and weigh up the proposed treatment options. Consent must be voluntary – that is – the patient must not be manipulated or coerced into consenting. Once this requirement is satisfied, it is essential that the patient is given all the relevant information related to the procedure or treatment in language that is easily understandable.[8]

According to the National Health Act of No 61 of 2003, Chapter 2 Section 6 the following information must be given to the patient (User of Health Care Service):

- range of diagnostic procedures and treatment options available;
- benefits, risks, costs and consequences associated with each option;
- user's right to refuse care after having received explanations of the implications, risks and obligations of such refusal.
- Furthermore, this information must be provided in a language that the patient understands and in a manner that takes into account the patient's literacy level.

Patients will make the decision either to authorise the intervention or decline the procedure or the treatment. They can also withdraw consent at any time. The dental professional's recommendation is also important. This is especially relevant for

South Africa where the concept of autonomy is not fully developed and where patients still place high value on the advice of their health care professionals. Therefore in advising patients, it is essential to always be motivated by the patient's best interests.[8]

The final decision taken will be dependent upon a review of the treatment options based on symptom and disease status, and choices may range from retention with appropriate restorative or periodontal care and follow-up, to coronectomy, to extraction. It is worth repeating the importance of ensuring that the options are clearly explained, in an even-handed, unbiased manner, for the patients together with a consideration of the risks and benefits of retention and removal. It is critical to weigh heavily the patient's decision regarding the management of third molar teeth. Evidence-based clinical decision making combines the best currently available literature with the clinician's experience and skills and incorporates explicitly the patient's preference in terms of real and perceived risks, benefits, and desires.[4]

The management of asymptomatic, disease-free third molar teeth is challenging and further research is required in the form of long-term and well-designed prospective randomised controlled trials of prophylactic extraction versus retention of asymptomatic impacted third molars. To solve the problem of comparability an overall oral health related quality of life outcome measure is advocated. However, it is acknowledged that there are significant difficulties in conducting long duration trials in young adults who are both busy and mobile.

Dodson[4] has suggested that research should focus on four key areas:

i) the long-term outcomes of retained third molars;
ii) the efficacy of active surveillance of a management strategy to optimise third molar management for patients who elect to retain their third molar teeth;
iii) assessing the risks and benefits of third molar retention compared with extraction; and
iv) measuring the long-term progression of local and systemic inflammatory disease. To solve the problem of comparability an overall oral health related quality of life outcome measure is advocated.[3] In order to make viable comparisons, researchers must be cognisant of the fact that there are may be racial differences between countries regarding age of eruption of teeth, anatomy and rate of symptoms, method of treatment, rate of complications, and compensation by authorities. Venta[7] has therefore suggested that international multicentre studies should include a focus on:
    i) age of eruption of third molars teeth in different countries and in different races;
    ii) rates of impacted teeth;
    iii) prevalence of pathologies (pericoronitis, caries etc);
    iv) indications for treatment;
    v) methods of removal (local or general anaesthesia, dentist or specialist, use of analgesics and antibiotics) and
    vi) complications related to removal.

CONCLUDING REMARKS

In the setting of unknown outcomes, practitioners and oral and maxillofacial surgeons can only rely on clinical experience and should make evidence-based decisions that heavily weight patient values and preference among treatment alternatives together with the cost of managing third molar teeth. It is incumbent on the clinician when eliciting informed consent to make it clear to adult patients with asymptomatic third molars that there is no evidence one way or the other about the benefits or otherwise of removing asymptomatic third molar teeth. The same communication strategy to adolescents and their parents regarding the impact of surgical removal on late lower incisor crowding should be advocated.

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